



## Wet Armature Soft Shift Directional Valves

DG4S4\*W-01\*A/B/C-(U)-\*\*\*-60-S491

| COIL      | VOLTAGE 60 HZ 50 HZ  | COIL CODE | DIN COIL  |
|-----------|----------------------|-----------|-----------|
| 523604    | 105 DC               | BB        | 02-301925 |
| 525340    | 210 DC               | BD        | 02-301926 |
| 02-155237 | 12V DC Non-rectified | G         | 02-155868 |
| 02-155238 | 24V DC Non-rectified | H         | 02-155867 |

| ORIFICE (1 req'd per core tube) |                 |
|---------------------------------|-----------------|
| 635138                          | Blank (Std 047) |
| 524588                          | 062             |
| 524589                          | 078             |

| SPRING    | SPOOL TYPE | COLOR CODE |
|-----------|------------|------------|
| 691417    | A          | RED        |
| 691416    | 2B/C       | BLUE       |
| 568617    | 0/6/B/C    | BLACK      |
| 02-155885 | 8B/C       | WHITE      |

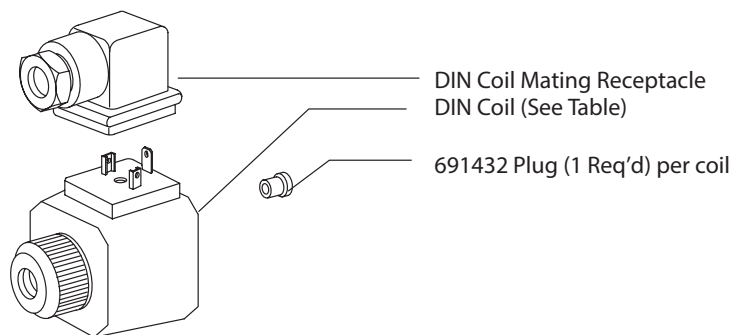
#### Type 'A' Spool Assembly Notes

Assemble type 'A' spools with narrow shank towards actuator

#### Type 'B' & 'C' Spool Assembly Notes

For type 8 spools, solenoid designations are reversed.

| SPOOL TYPE | PART       |
|------------|------------|
| 0A         | 522858     |
| 2A         | 522857     |
| 9A         | 522859     |
| 0B         | 522856     |
| 2B         | 522855     |
| 6B         | 691402     |
| 8B         | 854991 S/A |
| 0C         | 522856     |
| 2C         | 522855     |
| 6C         | 691402     |
| 8C         | 854991 S/A |

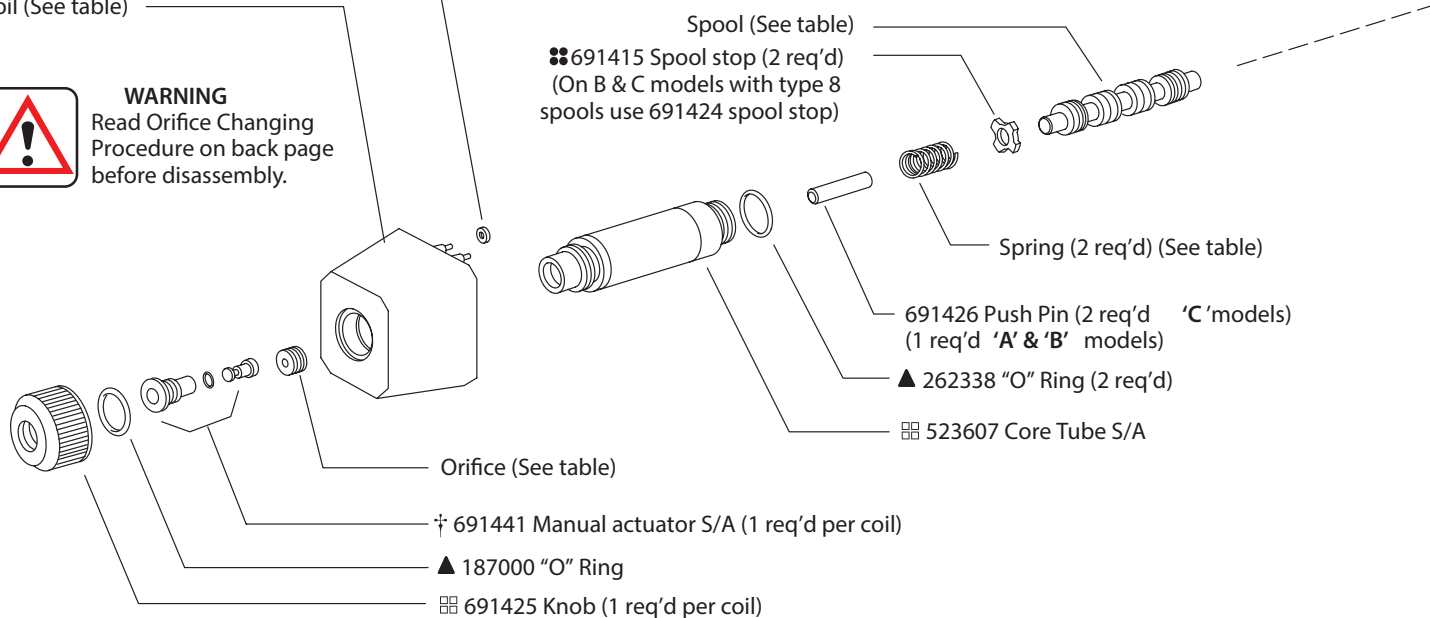


▲ 500348 Seal (1 req'd per coil)

Coil (See table)



**WARNING**  
Read Orifice Changing  
Procedure on back page  
before disassembly.



# Note

Left hand assembly shown for A & B models. For right hand assembly all parts are reversed except body.

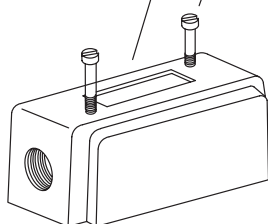
## System Pressure

|        | 1000 psi | 2000 psi | 3000+ psi |
|--------|----------|----------|-----------|
| Valves | 20/18/15 | 20/18/15 | 19/17/14  |

# Note

For satisfactory service life of these components in industrial applications, use full flow filtration to provide fluid which meets ISO cleanliness code.

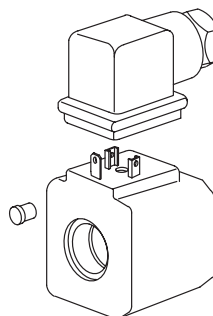
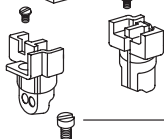
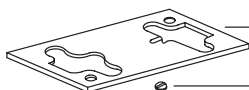
- ⊗ ¥ 691299 Screw (2 req 'd)
- ⊗ 691418 Junction box



523603 Rectifier board  
(rectifier board used only with BB & BD coils (non-DIN type))



- ▲ ⊗ 691419 Gasket
- ⊗ 696440 Gasket for type '8' models
- ▲ ⊗ 501212 Screw (2 req 'd per terminal block)
- ⊗ 500366 Terminal blockS/A (1 req 'd per coil)
- ⊗ 501663 Screw



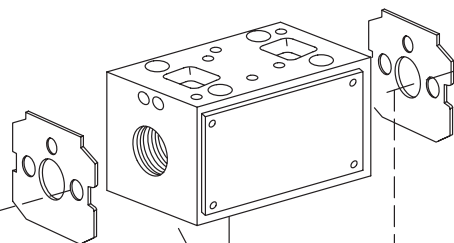
## DG4S4 -01C

NOTE  
Refer to other end of valve for common parts.

- ▲ 262334 "O" Ring (5 req 'd)

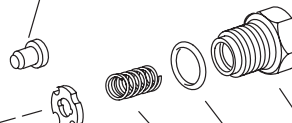
Body S/A  
(Not available for sale)

- ▲ 691421 Gasket (1 req 'd per coil)



## DG4S4-01A/B

- 691432 Plug (1 req 'd)



- ⊗ 691468 Plug

- ▲ 262338 "O" Ring
- Spring (See table)

Spool stop (See other end of valve)

## DIN Receptacles with rectifier for coil codes BB & BD:

|                        |                             |
|------------------------|-----------------------------|
| 02-141356 (w/o lights) | Coil B                      |
| 02-141357 (w/o lights) | Coil A                      |
| 02-141360 (w/ lights)  | Coil A or B Code BB 105 VDC |
| 02-141361 (w/ lights)  | Coil A or B Code BD 210 VDC |

## DIN receptacles without rectifier for coil codes G & H:

|                     |        |
|---------------------|--------|
| 710776 (w/o lights) | Coil A |
| 710775 (w/o lights) | Coil B |
| 977467 (w/ lights)  | Coil A |
| 977466 (w/ lights)  | Coil B |

- ▲ Included in seal kit 934628

- ⊗ Assemble 691424 spool stop with sharp edge towards body.

- ⊗ Omit when using DIN coils

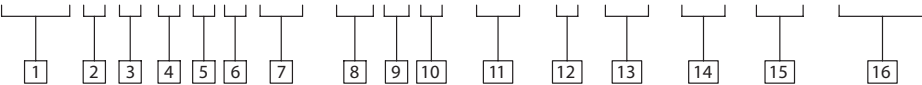
- ⊗ Torque 24 -29 N.m (18 -22 lbf. ft.)

- ¥ Torque 2.3 -2.8 N.m (20 -25 lbf. in.)

- † Torque 6.2 -7.3 N.m (55 -65 lbf. in.)

# Model Code

(F3) D G 4 S 4 \*W - 01 \* C - (U) - \* - \*\*\* - 60 - LH - S491



|                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                               |
|---------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| <b>1 Special Seals</b><br><b>Blank</b> - Standard seals<br><b>F3</b> - Special seals                                                                    | <b>8 Interface</b><br><b>01</b> - ISO-4401-AC-50-4-A<br>NFPA D05 ( $\frac{1}{8}$ in. nominal size)                                                                                                                                                                                                                                           | <b>12 Coil Identification</b><br><b>13 Soft Shift Orifice</b><br><b>Blank</b> - Standard (.047)<br><b>062</b> - (.062)<br><b>078</b> - (.078) |
| <b>2 Directional Control Valve</b>                                                                                                                      | <b>9 Spool Types</b><br>A models - 0, 2, 9<br>B models - 0, 2, 6, 8<br>C models - 0, 2, 6, 8                                                                                                                                                                                                                                                 | <b>14 Design</b>                                                                                                                              |
| <b>3 Manifold or Subplate Mounted</b>                                                                                                                   | <b>10 Spool/Spring Arrangement</b><br>A -Spring offset P to A<br>B -Spring centered solenoid "A" removed<br>C -Spring centered, three positon                                                                                                                                                                                                | <b>15 Left Hand Assembly</b><br>(Omit for right hand assembly with solenoid "A" removed.)                                                     |
| <b>4 Solenoid Operated</b>                                                                                                                              | <b>11 Wet Armature Solenoid</b><br>(non-serviceable core tube)<br><b>Blank</b> - Plug-in coils<br><b>U</b> - DIN 43650 coils w/o electrical plug (non-rectified)<br><b>U1</b> - Connector fitted<br><b>U6</b> - Connector fitted w/lights<br><b>U11</b> - Connector fitted w/rectifier & lights<br><b>U12</b> - Connector fitted w/rectifier | <b>16 Special Soft Shift Solenoids</b>                                                                                                        |
| <b>5 Sliding Spool</b>                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                               |
| <b>6 Flow Direction</b><br>4 - Four way                                                                                                                 |                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                               |
| <b>7 Electrical Accessories</b><br><b>Blank</b> - For "U" type connectors<br><b>W</b> - Wiring housing<br><b>LW</b> - Wiring housing w/indicator lights |                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                               |

## Orifice Changing Procedure



### WARNING

1. Before breaking a circuit connection make certain that power is off and system pressure has been released. Lower all vertical cylinders, discharge accumulators and block any load whose movement could generate pressure.Plug all removed units and cap all lines to prevent the entry of dirt into the system.

2. Using a  $\frac{5}{32}$ " hex key, remove manual actuator plug and spring from the end of solenoid (Tightening torque 6.2 –7.3 N.m 55–65 lbf. in.)

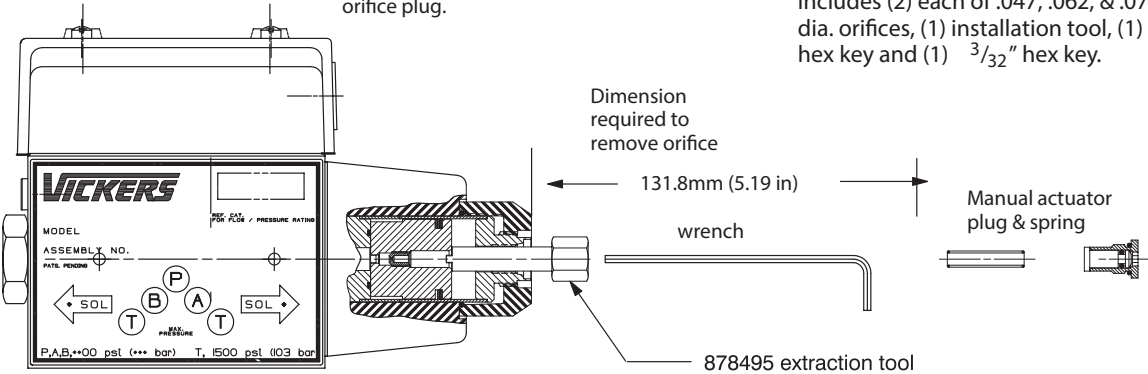
3. Insert extraction tool (878495) into solenoid via the manual actuator opening. Rotate tool until aligned and push into slot in armature.

4. Using  $\frac{1}{2}$ " wrench and tool to prevent the armature from rotating, insert  $\frac{3}{32}$ " hex key down the center of tool and remove orifice plug.

5. Replace by the same method, tightening orifice snug to ensure bottoming of threads. Smaller orifices increase response times. Larger orifices decrease response times. The .047 in. dia. orifice is standard in the valve.

### Orifice & tool kit 02-119131

For fine tuning shift performance, orifices must be ordered separately. The kit includes (2) each of .047, .062, & .078 in. dia. orifices, (1) installation tool, (1)  $\frac{5}{32}$ " hex key and (1)  $\frac{3}{32}$ " hex key.



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**Danfoss  
Power Solutions (US) Company**  
2800 East 13th Street  
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Phone: +1 515 239 6000

**Danfoss  
Power Solutions GmbH & Co. OHG**  
Krokamp 35  
D-24539 Neumünster, Germany  
Phone: +49 4321 871 0

**Danfoss  
Power Solutions ApS**  
Nordborgvej 81  
DK-6430 Nordborg, Denmark  
Phone: +45 7488 2222

**Danfoss  
Power Solutions Trading  
(Shanghai) Co., Ltd.**  
Building #22, No. 1000 Jin Hai Rd  
Jin Qiao, Pudong New District  
Shanghai, China 201206  
Phone: +86 21 2080 6201